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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,925	03/08/2004	David G. Mehuys	78307CIP1 (P1269 US CIP)	1786
27975	7590	02/13/2006	EXAMINER FLORES RUIZ, DELMA R	
ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A. 1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE P.O. BOX 3791 ORLANDO, FL 32802-3791			ART UNIT 2828	PAPER NUMBER

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/795,925

Applicant(s)

MEHUYS ET AL.

Examiner

Delma R. Flores Ruiz

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 8, 9, 11-21 and 23-27 is/are rejected.
- 7) ☒ Claim(s) 4, 7, 10 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/08/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2828

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 03/08/2004 have been considered by the examiner.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

In Paragraph [0028], lines 3 – 4, character WDM signal 201,

Paragraph [0036], line 3, character laser 400 and

Paragraph [0047], line 16, character output facet 908.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as

Art Unit: 2828

either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3, 5 – 6, 8 – 9, 11 – 21, and 23 – 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Rakuljic et al. (5,691,989).

***Regarding claim 1***, Rakuljic discloses in Figures 4 – 23B a laser system, comprising: a laser element (see Fig. 8A, Character 38) having a laser signal output, the wavelength profile of which changes with a change in operating conditions (Column 3, Lines 39 – 51); and a wavelength-selective stabilizing reflective filter (Column 3, Lines 38 – 45) in line with the laser for receiving the laser signal, said reflective filter (see Fig. 8A, Characters 40 and 41 ) having a reflectivity profile having reflectivity peaks at two

predetermined spaced wavelengths (see Fig. 8A Characters  $\lambda^-$  and  $\lambda^+$ ) within the operating wavelength of the laser in the absence of said filter, the reflective filter being partially reflective at said different predetermined reflective spaced wavelengths and substantially less reflective in a wavelength band there between (see Figure 19, Column 16, Lines 33 – 49), and providing optical feedback of a portion of the laser signal to the laser element that wavelength-stabilizes its output (Column 3, Lines 24 – 33), a degree of reflectivity at said predetermined wavelengths and a relative wavelength separation between the predetermined spaced wavelengths being such that throughout the change in operating conditions (Column 9, Lines 61 – 65), output power of the laser element is concentrated at one or more of the reflector center wavelengths, with regions of negligible output power at wavelength sections between the reflector center wavelengths (Column 3, Lines 30 – 52).

**Regarding claim 2**, Rakuljic discloses in Figures 4 – 23B the reflective filter comprises two filters having different reflectivity responses, one of the filters having a reflectivity peak at one of the two predetermined spaced wavelengths and the other of the filters having a reflectivity peak at the other of the two predetermined spaced wavelength (Figure 8, Column 3, Lines 53 – 63 and Column 11, Lines 23 – 45).

**Regarding claim 3**, Rakuljic discloses in Figures 4 – 23B the two filters are arranged serially so that in operation the laser signal is incident upon the two

filters (Figure 8A, Column 3, Lines 53 - 63).

Rakuljic shown Figures 4, 8A, 6, and 21.

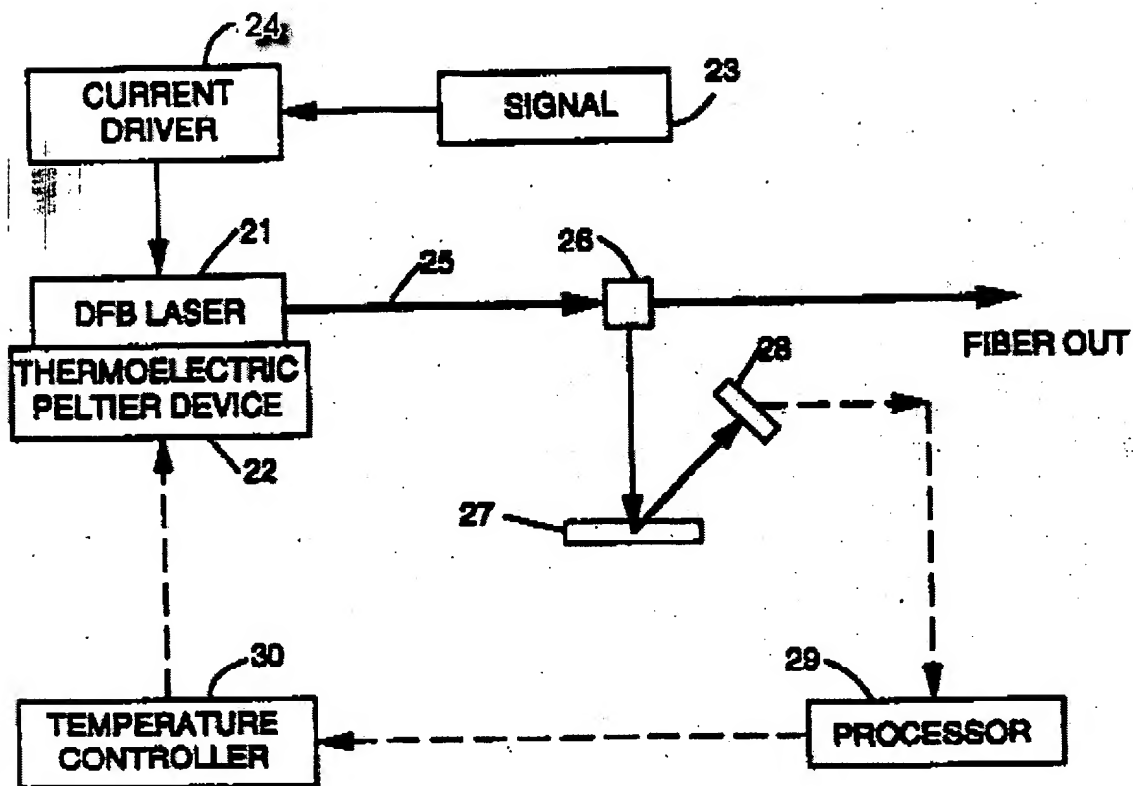


FIG. 4

Art Unit: 2828

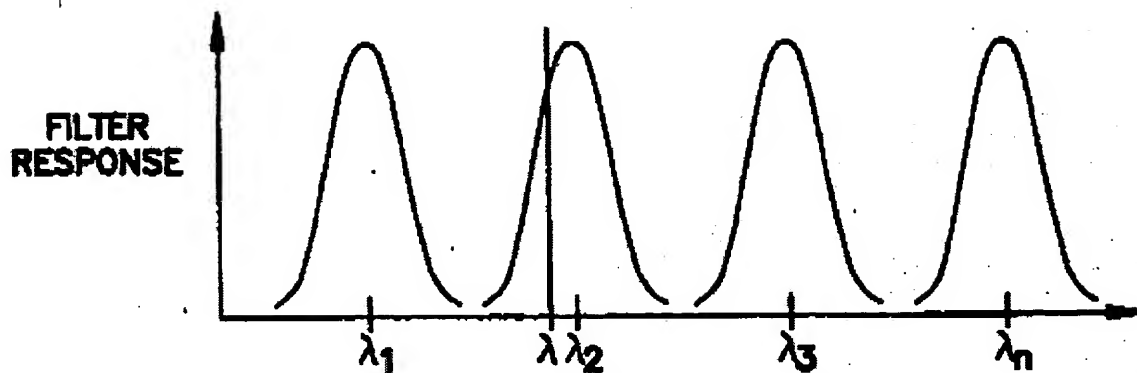


FIG. 6

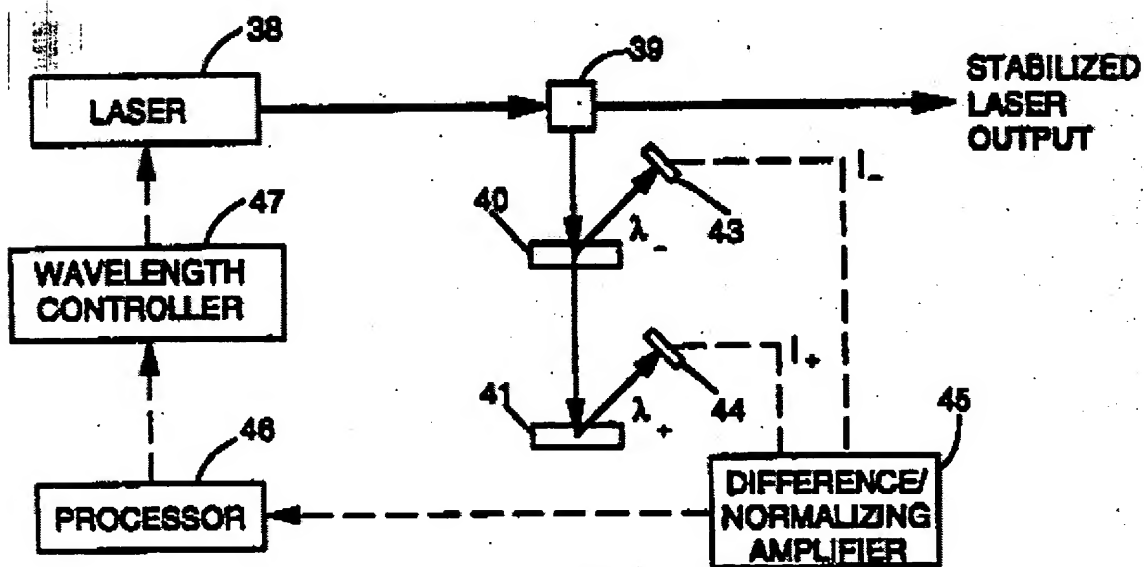
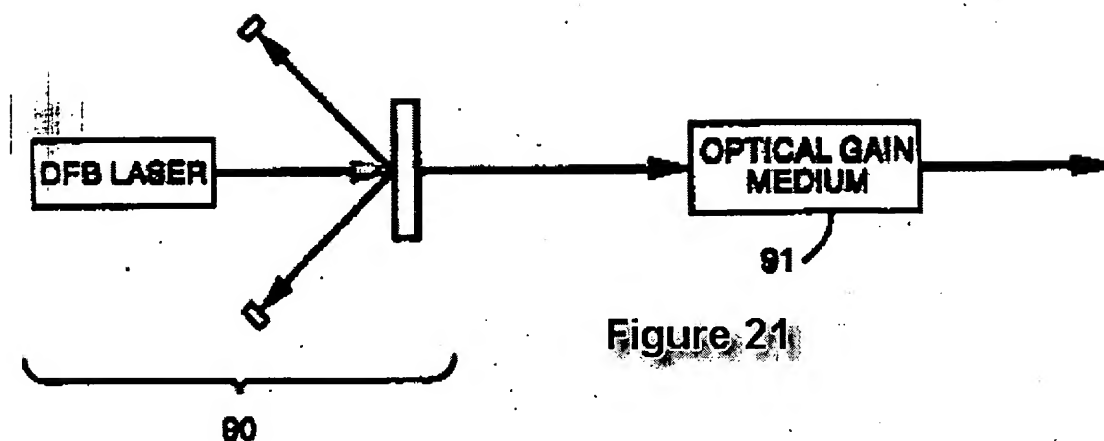


FIG. 8A



**Regarding claim 5**, Rakuljic discloses in Figures 4 – 23B an optical fiber coupled to receive light transmitted from the output of the laser system (Column 5, Lines 19 – 32).

**Regarding claim 6**, Rakuljic discloses in Figures 4 – 23B the wavelength selective reflective filter includes wavelength selective reflectors in the form of fiber Bragg gratings (Figures 6 and 10, Column 9, Lines 32 - 44 and Column 11, Lines 47 – 54).

**Regarding claim 8**, Rakuljic discloses in Figures 4 – 23B the system comprises two of said predetermined wavelengths that are located in wavelength to either side of a wavelength peak in an absorption spectrum of a gain medium to be pumped by the system (Figures 21 – 23, Column 12, Lines 30 – 67 and Column 18, Lines 11 – 24).



**Regarding claim 9**, Rakuljic discloses in Figures 4 – 23B the predetermined wavelengths are substantially equidistant in wavelength from the absorption peak (Figures 21 – 23, Column 12, Lines 30 – 67 and Column 18, Lines 11 – 24).

**Regarding claim 11**, Rakuljic discloses in Figures 4 – 23B a passive heat sink in thermal contact with the laser system (Column 3, Lines 39 – 43 and Column 8, Lines 60 – 64).

**Regarding claim 12**, Rakuljic discloses in Figures 4 – 23B the wavelength selective reflective filter includes two reflectors (see Fig. 8A Character 40 and 41) providing feedback to the laser element (see Fig. 8A, Character 38) and wherein the laser is stabilized solely by the optical feedback provided by the wavelength-selective stabilizing reflectors in series (Figure 8A).

**Regarding claims 13, and 17**, Rakuljic discloses in Figures 4 – 23B change in operating conditions comprises a change in an operating temperature of the laser element (Column 2, Lines 43 – 44 and Column 3, Lines 30 – 32) .

**Regarding claims 14 – 16 and 18**, Rakuljic discloses in Figures 4 – 23B the laser element comprises a semiconductor laser (Column 3, Line 31) and the wavelength

selective filter is a holographic volume Bragg grating (see Fig. 12, Character 63 (Column 3, Lines 22 – 25, and Column 4, Lines 57 – 59 and Column 13, Lines 43 - 46) and the wavelength selective filter is a Bragg grating written in a free space optical element (Column 3, Lines 22 – 25, and Column 4, Lines 57 – 59).

**Regarding claim 19**, Rakuljic discloses in Figures 4 – 23B the wavelength selective filter is a complex Bragg grating having two distinct reflectivity peaks at the predetermined wavelength (Figure 8A).

**Regarding claims 20 and 21**, Rakuljic discloses in Figures 4 – 23B a gain medium optically coupled with the laser element for receiving pump energy therefrom (Column 13, Lines 34 – 51) and the optical gain medium comprises a rare earth-doped fiber amplifier (Column 17, Line 32).

**Regarding claim 23**, Rakuljic discloses in Figures 4 – 23B an output signal monitor that detects light output by the gain medium and generates a monitor signal indicative thereof (Column 13, Lines 24 – 51).

**Regarding claim 24**, Rakuljic discloses in Figures 4 – 23B a controller that receives the monitor signal and generates an output signal that is used to adjust the

operation of the laser in response to the monitor signal (Figures 21 – 23, Column 12, Lines 30 – 67 and Column 18, Lines 11 – 24).

**Regarding claim 25**, Rakuljic discloses in Figures 4 – 23B an input signal monitor that detects light input to the gain medium and generates a monitor signal indicative thereof and directs it to the controller (Figures 21 – 23, Column 12, Lines 30 – 67 and Column 18, Lines 11 – 24).

**Regarding claim 26**, Rakuljic discloses in Figures 4 – 23B the system comprises two of said predetermined wavelengths that are located in wavelength to either side of a wavelength peak in an absorption spectrum of a gain medium to be pumped by the system (Figures 21 – 23, Column 12, Lines 30 – 67 and Column 18, Lines 11 – 24).

**Regarding claim 27**, Rakuljic discloses in Figures 4 – 23B the predetermined wavelengths are substantially equidistant in wavelength from the absorption peak (Figures 21 – 23, Column 12, Lines 30 – 67 and Column 18, Lines 11 – 24).

Art Unit: 2828

***Allowable Subject Matter***

Claims 4, 7, 10 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (571) 272-1940. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Min Sun Harvey can be reached on (571) -272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 2828

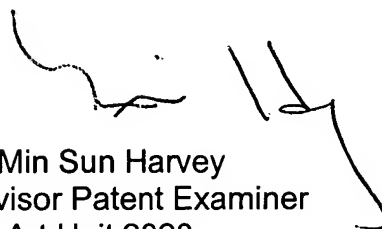
you have questions on access to the Private PAIR system, contact the Electronic  
Business Center (EBC) at 866-217-9197 (toll-free).



Delma R. Flores Ruiz

Examiner

Art Unit 2828



Min Sun Harvey

Supervisor Patent Examiner

Art Unit 2828

DRFR/MH

February 1, 2006